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10/810,408	03/26/2004	Min Chuin Hoo	15625US02	8918

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EXAMINER	
JOSEPH, JAISON	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/810,408	HOO ET AL.	
	Examiner	Art Unit	
	JAISON JOSEPH	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23,25,26,28,29 and 31-46* is/are rejected.

7)☒ Claim(s) *24,27 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/18/2009 have been fully considered but they are not persuasive.

Regarding claim1, applicant argue, "Wagner does not disclose or suggest at least the limitation of "determining a signal quality metric for a plurality of signal paths, wherein one or more of said plurality of signal paths is selected based on stored information related to preceding frames, the stored information received via each of the plurality of signal paths," as recited by the Applicant in independent claim 1." However the Office respectfully disagrees. Wagner clearly teach "selecting the payload signal source based at least upon a previous quality metric corresponding to a previous payload signal source comparing unfavorably with a threshold" (see column 18,lines 18 - 21). Wagner further teach "the control and signal processing unit 208 preferably provides control of the antenna switch 202" (see column 4, lines 50 – 51) and "The control and signal processing unit 208 ... and operational data stored in volatile or non-volatile digital storage devices or both as known in the art" (see column 4, lines 63 - 65) Wagner further teach "quality metric, Q(T), of the test antenna is updated and stored at step 504" (see column 7,lines 39 – 40). Therefore Wagner clearly teach the limitations of "one or more of said plurality of signal paths is selected based on stored information related to preceding frames". The Office further submits that Wagner et al. teach a method for processing signals in a communication system (see abstract), the method comprising: determining a signal quality metric for each of a plurality of signal paths

(see abstract lines 1 – 3), wherein one or more of said plurality of signal paths is selected based on stored information for preceding frames, the preceding frames received via each of the plurality of signal paths (see abstract and column 18, lines 3 – 21); assigning a threshold signal quality metric for the plurality of signal paths (see abstract and column 18, lines 3 – 21); and discarding a signal path from the plurality of signal paths , if the determined signal quality metric for the signal path does not satisfy the threshold signal quality metric (see abstract and column 18, lines 3 – 21). Therefore Wagner et al teach all cited limitations. Therefore claim 1 stands rejected.

With respect claims 3, 5-7, 17, 19-23, 28, 32, 34, 36- 38, 40, 42, and 44—46, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

With respect claims 2, 4, 16, 18, 33, 35, 39, 41, and 43, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

With respect claims 23 and 29, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

With respect claims 8, 10, 12-14, and 25, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

With respect claims 9 and 11, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

With respect claim 26, the Applicant makes same argument as the argument applied to claim 1. Therefore the same response applied to the argument with respect to claim 1 above is applied here.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> ((b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5 – 7, 15, 17, 19 – 23, 28, 31, 32, 34, 36 – 40, 42, 44 – 46 are rejected under 35 U.S.C. 102 (b) as being anticipated by Wagner et al. (US Patent 6,456,675).

Regarding claim 1, Wagner et al. teach a method for processing signals in a communication system (see abstract), the method comprising: determining a signal quality metric for each of a plurality of signal paths (see abstract lines 1 – 3), wherein one or more of said plurality of signal paths is selected based on stored information for preceding frames, the preceding frames received via each of the plurality of signal paths (see abstract and column 18, lines 3 – 21); assigning a threshold signal quality metric for the plurality of signal paths (see abstract and column 18, lines 3 – 21); and

discarding a signal path from the plurality of signal paths , if the determined signal quality metric for the signal path does not satisfy the threshold signal quality metric (see abstract and column 18, lines 3 – 21).

Regarding claim 3, which inherits the limitations of claim 1, Wagner et al further teach assigning a fixed threshold signal quality metric for each of the plurality of signal paths (see abstract and column 18, lines 3 – 21).

Regarding claim 5, which inherits the limitations of claim 1, Wagner et al. further teach wherein the signal quality metric comprises at least one of a power level characteristic, a packet error rate characteristic, a bit error rate characteristic, a propagation channel characteristic, and an interference level characteristic (see abstract).

Regarding claim 6, which inherits the limitations of claim 1, Wagner et al. further teaches wherein at least one of the signal paths comprises an antenna (see figure 1, 2, 3 and abstract).

Regarding claim 7, which inherits the limitations of claim 1, Tanaka further teaches wherein each of the plurality of signal paths comprises at least one of a receive signal path and a transmit signal path (see figure 1, 2, 3 and abstract).

Regarding claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 17, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 19, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 20, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 21, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

Regarding claim 22, which inherits the limitations of claim 1, Wagner et al. further teach the method further comprising selecting a first of said plurality of signal paths based on said previously stored information for preceding frames (see abstract and column 18, lines 3 – 21).

Regarding claim 28, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 22 is applicable hereto.

Regarding claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto. Wagner et al. further teach selecting a target signal path from said plurality of signal paths, for receiving the signals, based on said determined signal quality metric for said plurality of signal paths and said threshold signal quality metric (see abstract and column 18, lines 3 – 21).

Regarding claim 32, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 34, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 36, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 37, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 38, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

Regarding claim 40, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 42, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 44, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 5 is applicable hereto.

Regarding claim 45, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 6 is applicable hereto.

Regarding claim 46, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 7 is applicable hereto.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 4, 16, 18, 33, 35, 39, 41, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US Patent 6,456,675) in view of Tanaka (US Patent 7,245,678 B2).

Regarding claim 2, which inherits the limitations of claim 1, Wagner et al does not expressly teach assigning different threshold to each of the signal paths. However in analogous art, Tanaka teaches assigning a different threshold signal quality metric for each of the plurality of signal paths (see figure 1, 2, 3 and abstract and column 5, lines

16 - 20 and column 7, lines 55 – 65). Therefore it would have been obvious to an ordinary skilled in the art at the time the invention was made to incorporate the teaching of applying different threshold in Wagner. The motivation or suggestion to do so is to have a guaranteed quality for the received and reproduced signal.

Regarding claim 4, which inherits the limitations of claim 1, Tanaka further teaches dynamically changing the threshold signal quality metric for each of the plurality of signal paths (see figure 1, 2, 3 and abstract and column 7, lines 3 – 20 and column 7, lines 55 – 65)

Regarding claim 16, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 18, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 33, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 35, which inherits the limitations of claim 31, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 41, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 33 is applicable hereto.

Regarding claim 43, which inherits the limitations of claim 39, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 35 is applicable hereto.

6. Claims 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US Patent 6,456,675) in view of Mantha et al. (US 2005/0018634 A1).

Regarding claim 23, which inherits the limitations of claim 1, Wagner et al. does not expressly teach selecting a path based on history of previously selected paths. However in analogous art Mantha et al teach the method further comprising selecting one or more of said plurality of signal paths based on a history of previously selected signal paths (see page 7 right hand column, lines 8 - 12). Therefore it would have been obvious to an ordinary skilled in the art at the time the invention was made to incorporate the teaching of selecting signal path based on the history. The motivation or suggestion to do so is to detect signal accurately.

Regarding claim 29, which inherits the limitations of claim 15, the claimed system including the features that corresponds with subject matter mentioned above in the rejection of claim 23 is applicable hereto.

7. Claims 8, 10, 12 – 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US Patent 6,456,675) in view of Koerner (US Patent 7,049,933).

Regarding claim 8, 10, 12 – 14 and 28 - 30, Wagner et al is cited as explained in the above paragraph. Wagner et al does not expressly teach the antenna selecting functions is done by a Machine-readable medium having stored instructions stored thereon to perform the cited functions. However, Koerner teach a Machine-readable medium having stored instructions stored thereon to perform selecting at least one signal path (see column 15, lines 39 – 57). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to perform Wagner et al's method in a machine-readable medium. The motivation or suggestion to do so is to reduce the cost of the receiver.

8. Claims 9 and 11are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US Patent 6,456,675) in view of Tanaka (US Patent 7,245,678 B2) and further in view of Koerner (US Patent 7,049,933).

Regarding claim 9 and 11, Wagner et al in view of Tanaka is cited as explained in the above paragraph. Wagner et al in view of Tanaka does not expressly teach the antenna selecting functions is done by a Machine-readable medium having stored instructions stored thereon to perform the cited functions. However, Koerner teach a Machine-readable medium having stored instructions stored thereon to perform selecting at least one signal path (see column 15, lines 39 – 57). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to perform

Wagner et al in view of Tanaka method in a machine-readable medium. The motivation or suggestion to do so is to reduce the cost of the receiver.

9. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US Patent 6,456,675) in view of Mantha et al. (US 2005/0018634 A1) and further in view of Koerner (US Patent 7,049,933).

Regarding claim 9 and 11, Wagner et al in view of Mantha et al is cited as explained in the above paragraph. Wagner et al in view of Mantha et al does not expressly teach the antenna selecting functions is done by a Machine-readable medium having stored instructions stored thereon to perform the cited functions. However, Koerner teach a Machine-readable medium having stored instructions stored thereon to perform selecting at least one signal path (see column 15, lines 39 – 57). Therefore it would be obvious to an ordinary skilled in the art at the time the invention was made to perform Wagner et al in view of Mantha et al method in a machine-readable medium. The motivation or suggestion to do so is to reduce the cost of the receiver.

Allowable Subject Matter

10. Claims 24, 27 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAISON JOSEPH whose telephone number is (571)272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. J./
Examiner, Art Unit 2611

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611